

CLAIMS

1. A substrate for thin film solar cells consisting of a transparent insulating substrate, and a transparent electrode layer including at least zinc oxide deposited on the transparent insulating substrate, wherein the transparent insulating substrate has a fine surface unevenness having a root-mean-square deviation of the surface of 5 to 50 nm in an interface by a side of the transparent electrode layer, and a projected area consists of a curved surface.
2. The substrate for thin film solar cells according to Claim 1, wherein the transparent electrode layer has a film thickness of not less than 1 micrometer.
3. The substrate for thin film solar cells according to any of Claims 1 and 2, wherein a haze ratio measured as a ratio of a diffuse transmittance to a total transmittance using a C light source is not less than 20%.
4. The substrate for thin film solar cells according to any of Claims 1 to 3, wherein the transparent insulating substrate consists of stacked layer of a transparent base material having a smooth surface, and a transparent foundation layer, and the transparent foundation layer comprises transparent micro-particles having an average particle diameter of not less than 10 nm and not more than 100 nm, and a transparent binder
5. A thin film solar cell comprising the substrate for thin film solar cells according to Claims 1 to 4.
6. An integrated type thin film solar cell, comprising the

substrate for thin film solar cells according to Claims 1 to 4, and at least one crystalline photoelectric conversion unit layer and a back face electrode layer deposited on the transparent electrode layer, wherein the layers are further isolated by a plurality of isolation grooves so as to form a plurality of photoelectric conversion cells, and the plurality of photoelectric conversion cells are mutually electrically connected in series via a plurality of connection grooves.

7. A method for manufacturing a substrate for thin film solar cells according to Claims 1 to 4, wherein the transparent electrode layer including at least zinc oxide are deposited at temperatures of the transparent insulating substrate of not less than 150 degrees C.